

Sub A3

CLAIMS

1. A copper-alloy foil used for a laminate sheet, which contains, by weight percentage, one or more of from 0.01 to 2.0% of Cr and from 0.01 to 1.0% of Zr, the balance being copper and unavoidable impurities, and which comprises on the outermost surface a 10 nm or less (excluding 0 nm) thick oxide layer and occasionally a rust proof film, and 50%IACS or more of electrical conductivity, and 5.0N/cm or more of 180° peeling strength when thermally fusion-bonded with liquid crystal polymer.

2. A copper-alloy foil used for a laminate sheet, which contains, by weight percentage, one or more of from 0.01 to 2.0% of Cr and from 0.01 to 1.0% of Zr, and which further contains from 0.005 to 2.5% in total of at least one element selected from the group consisting of Ag, Al, Be, Co, Fe, Mg, Ni, P, Pb, Si, Sn, Ti and Zn, the balance being copper and unavoidable impurities, and comprises on the outermost surface a 10 nm or less (excluding 0 nm) thick oxide layer and occasionally a rust proof film, and 50%IACS or more of electrical conductivity, and 5.0N/cm or more of 180° peeling strength when thermally fusion bonded with liquid crystal polymer.

3. A copper-alloy foil according to claim 1 or 2, having 350°C or higher of heating temperature, at which the tensile strength after heating for 1 hour is intermediate between that prior to heating and that after fully annealed.

4. A laminate sheet of a copper-alloy foil and liquid crystal polymer thermally fusion-bonded without a binder, wherein said copper-alloy foil contains, by weight percentage, one or more of from 0.01 to 2.0% of Cr and from 0.01 to 1.0% of Zr, the balance being copper and unavoidable impurities, and comprises on the outermost surface a 10 nm or less (excluding 0 nm) thick oxide layer and occasionally a rust-proof film, and 50%IACS or more of electrical conductivity, and 5.0N/cm or more of 180° peeling strength when thermally fusion-bonded with liquid crystal polymer.

5. A laminate sheet of a copper-alloy foil and liquid crystal polymer thermally fusion-bonded without a binder, wherein said copper-alloy foil contains, by weight percentage, one or more of from 0.01 to 2.0% of Cr and from 0.01 to 1.0% of Zr, and further contains from 0.005 to 2.5% in total of at least one element selected from the group consisting of Ag, Al, Be, Co, Fe, Mg, Ni, P, Pb, Si, Sn, Ti and Zn, the balance being copper and unavoidable impurities, and comprises on the outermost surface a 10 nm or less (excluding 0 nm) thick oxide layer and occasionally a rust-proof film, and 50%IACS or more of electrical conductivity, and 5.0N/cm or more of 180° peeling strength when thermally fusion bonded with liquid crystal polymer.

6. A laminate sheet of a copper-alloy foil and liquid crystal polymer

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according claim 4 or 5, wherein said copper-alloy foil has 350°C or higher of heating temperature, at which the tensile strength after heating for 1 hour is intermediate between that prior to heating and the heated and that after fully annealed.

7. A laminate sheet of a copper-alloy foil and liquid crystal polymer
5 according claim 4 or 5, wherein said liquid crystal polymer is a thermotropic type.

8. A laminate sheet of a copper-alloy foil and liquid crystal polymer according claim 7, wherein said liquid crystal polymer has the same coefficient of thermal expansion as that of the copper-alloy foil.

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